

Park Planning & Stewardship Division

Montgomery County Department of Parks 2016 Monitoring Sites



M-NCPPC, Department of Parks, Montgomery County, MD
Streams Roundtable
February 19, 2016

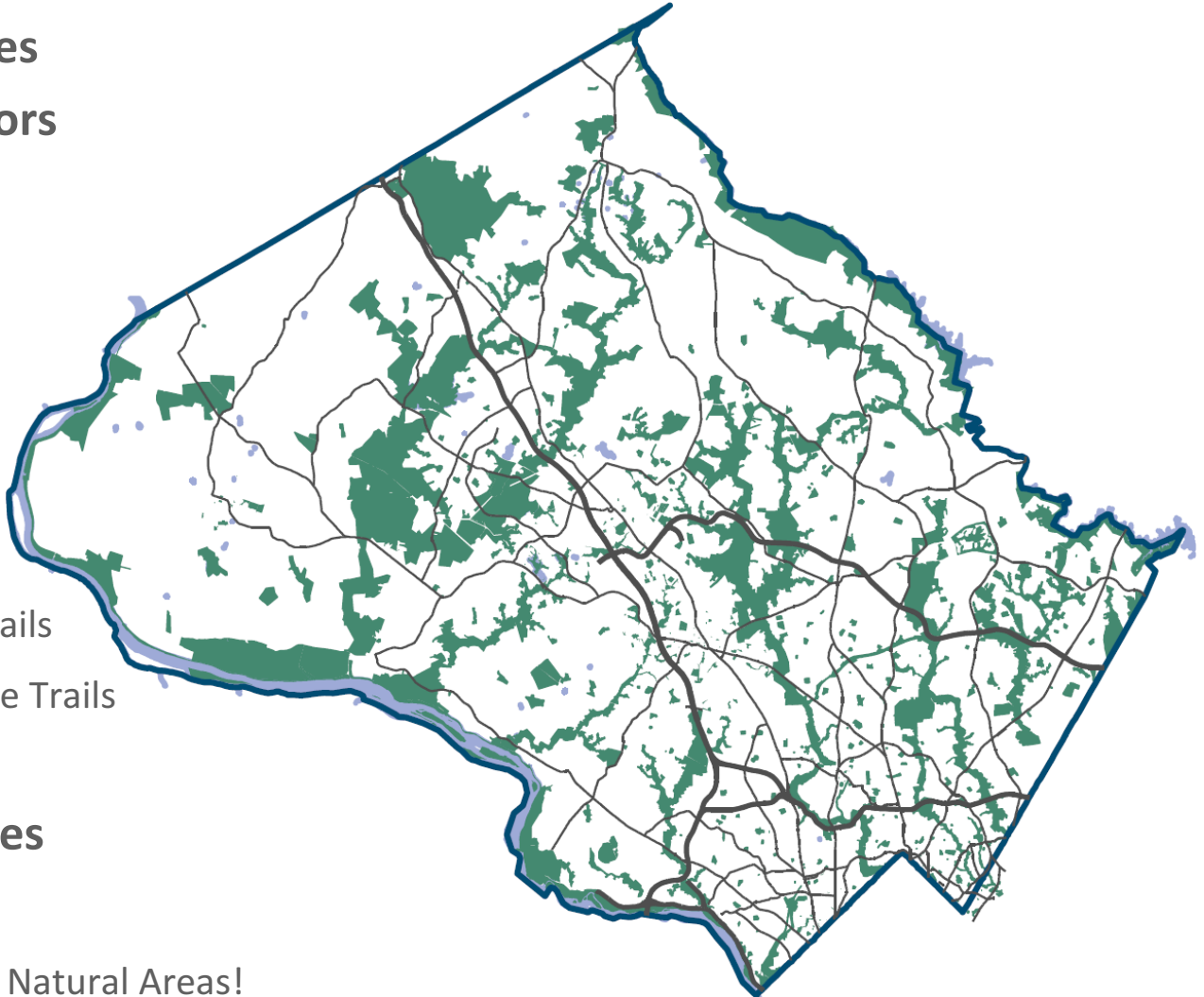
Dave Sigrist, Natural Resources Specialist
Park Planning and Stewardship Division



M-NCPPC Park System in Montgomery County, MD

- **417 Parks on 37,076 acres**
- **14,000,000 Annual Visitors**
- **9,285 Developed Acres**
 - 290 Athletic Fields
 - 213 Basketball Courts
 - 281 Playgrounds
 - 117 Historical Structures
 - 87 Picnic Shelters
 - 83 Miles of Hard Surface Trails
 - 153 Miles of Natural Surface Trails
- **27,791 Natural Area Acres**

Nearly $\frac{3}{4}$ of our Parks System is Natural Areas!



What We Do

Biological Monitoring:

- Benthic Macroinvertebrate Sampling in Spring (March thru April).
- Return to same sites in Summer for electrofishing (June thru September).
- Coordinate site selection with Montgomery County Department of Environmental Protection (MCDEP) to prevent overlap.



What We Do

Biological Monitoring:

- Benthic Macroinvertebrate Data in the Spring Index Period.
- Fish Data in the Summer Index Period.
- Herpetological Data during both Index Periods.



What We Do

Also collected during both Index Periods:

- Habitat Data (Instream Cover, Epifaunal Substrate, Embeddedness, Bank Stability, etc.)
- Physical Chemistry Data (temp, DO, conductivity, pH)



What We Do

Similarities to MBSS:

- Collect data during same Spring & Summer Index Periods.
- Same collection protocols for Macroinvertebrates & Fish.
- Maintain MBSS Certifications for Benthic Sampling, Fish Crew Leader & Fish Taxonomy.



What We Do

Differences from MBSS:

- Record information on data sheets developed by MCDEP.
- Use matrix developed by MCDEP to calculate IBI's.
- Macroinvertebrate Subsampling is done with a Caton style (smaller) subsampling grid.
- Chironomidae larvae identified to tribe instead of genus.



Index of Biological Integrity, Macroinvertebrates

Scoring Criteria for SB Loam Region, 1st & 2nd Order Streams

Metric	Results	Scoring Criteria ^(a)			IBI Score
		5	3	1	
Taxa Richness	22	> 20	10 - 20	< 10	5
Biotic Index	3.9	< 4.0	4.0 - 6.9	> 6.9	5
SCR: FC + SCR	71%	> 20%	10% - 20%	< 10%	5
HYD: EPT	20%	< 12%	12% - 56%	> 56%	3
%DOM	23%	< 34%	34% - 67%	> 67%	5
EPTI	10	> 10	6 - 10	< 6	3
%EPTI	70%	> 54%	27% - 54%	< 27%	5
SHR: T	27%	> 4%	2% - 4%	< 2%	5
Total IBI SCORE					36
					Excellent

Taxa Richness

Biotic Index

SCR: FC + SCR

HYD: EPT

%DOM

EPTI

%EPTI

SHR: T

Total number of taxa

Expresses the relative abundance of tolerant species in a sample (see formula below)

Ratio of scrapers to filtering collectors & scrapers

Ratio of Hydropsychid individuals to total number of EPT individuals

Ratio of taxa with the highest number of individuals to total number of individuals

Total number of Ephemeroptera, Plecoptera & Trichoptera taxa

Ratio of EPT individuals to total number of individuals

Ratio of Shredder individuals to total number of individuals

Biotic Index (HBI) Formula

$$HBI = \sum \left[\left(\frac{\text{number of individuals in taxa}}{\text{total number of individuals}} \right) \times (\text{tolerance value}) \right]$$

(a) Scoring Criteria based on 1995 and 1996 reference streams.

Total IBI Score	Rating
36 - 40	Excellent
27 - 35	Good
17 - 26	Fair
8 - 16	Poor

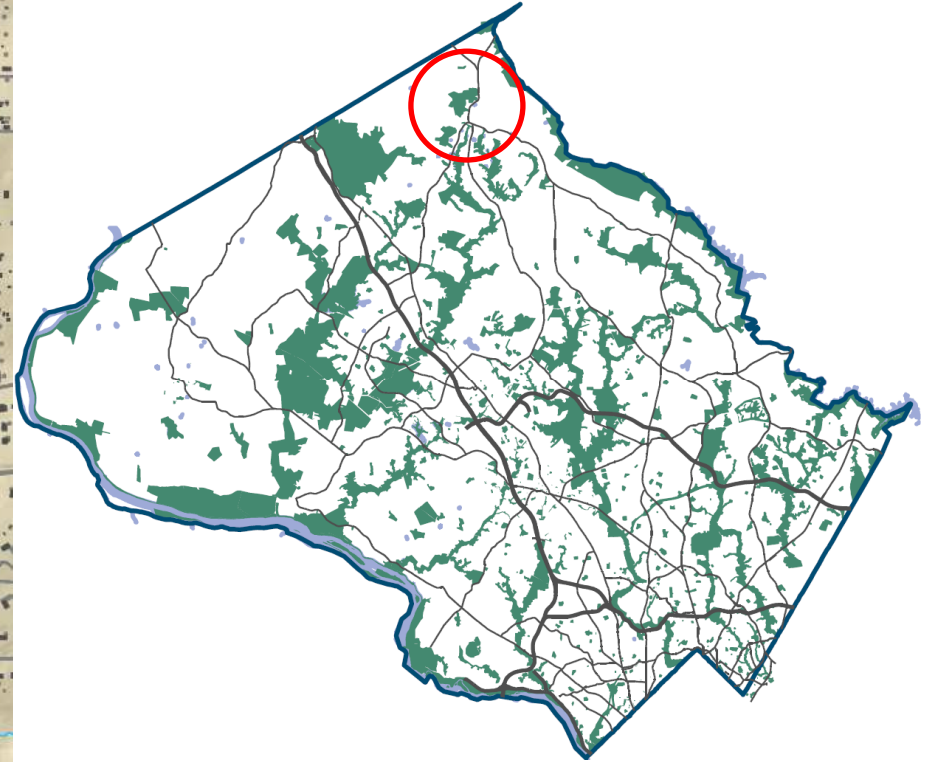
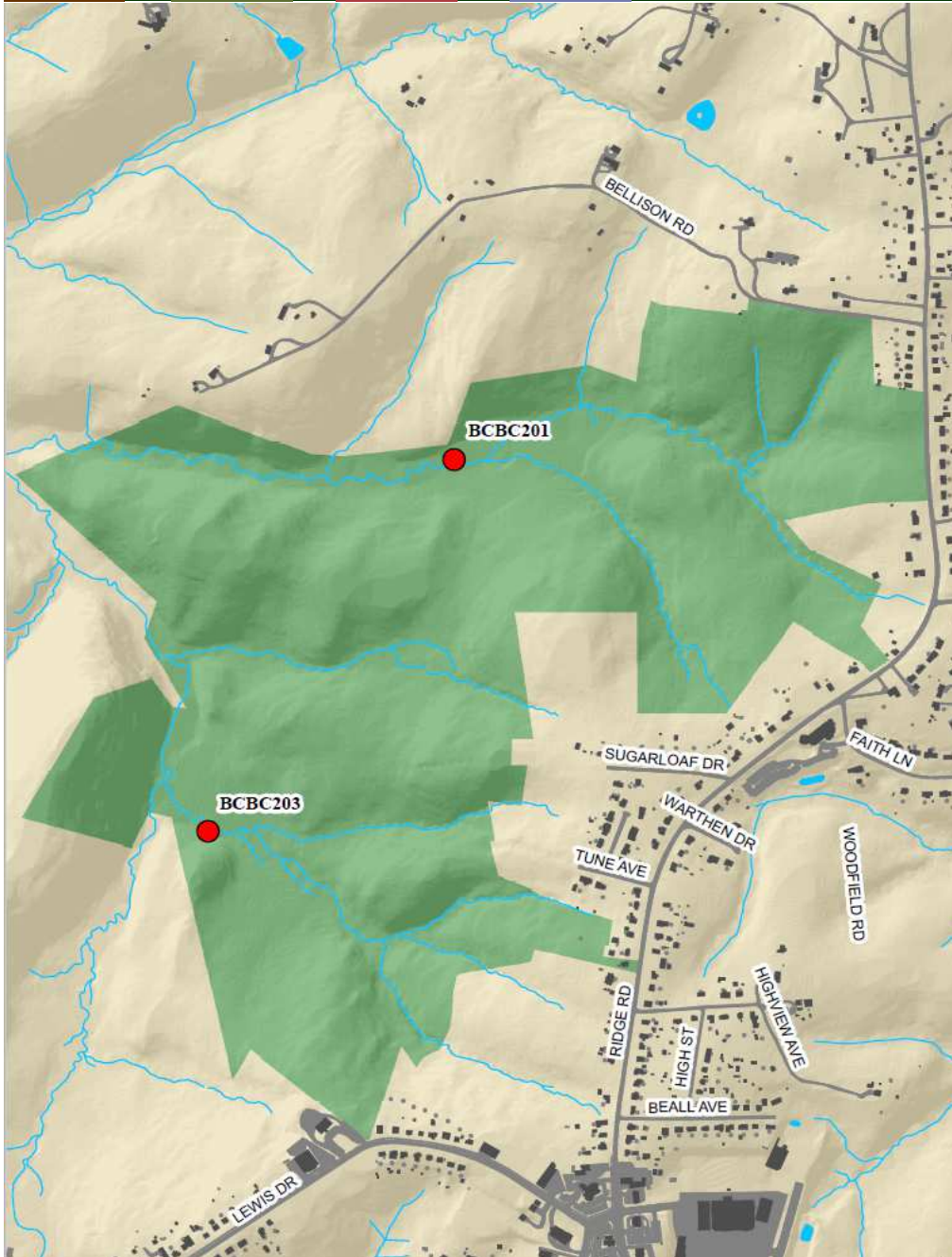


Montgomery Parks 2016 Proposed Monitoring Sites

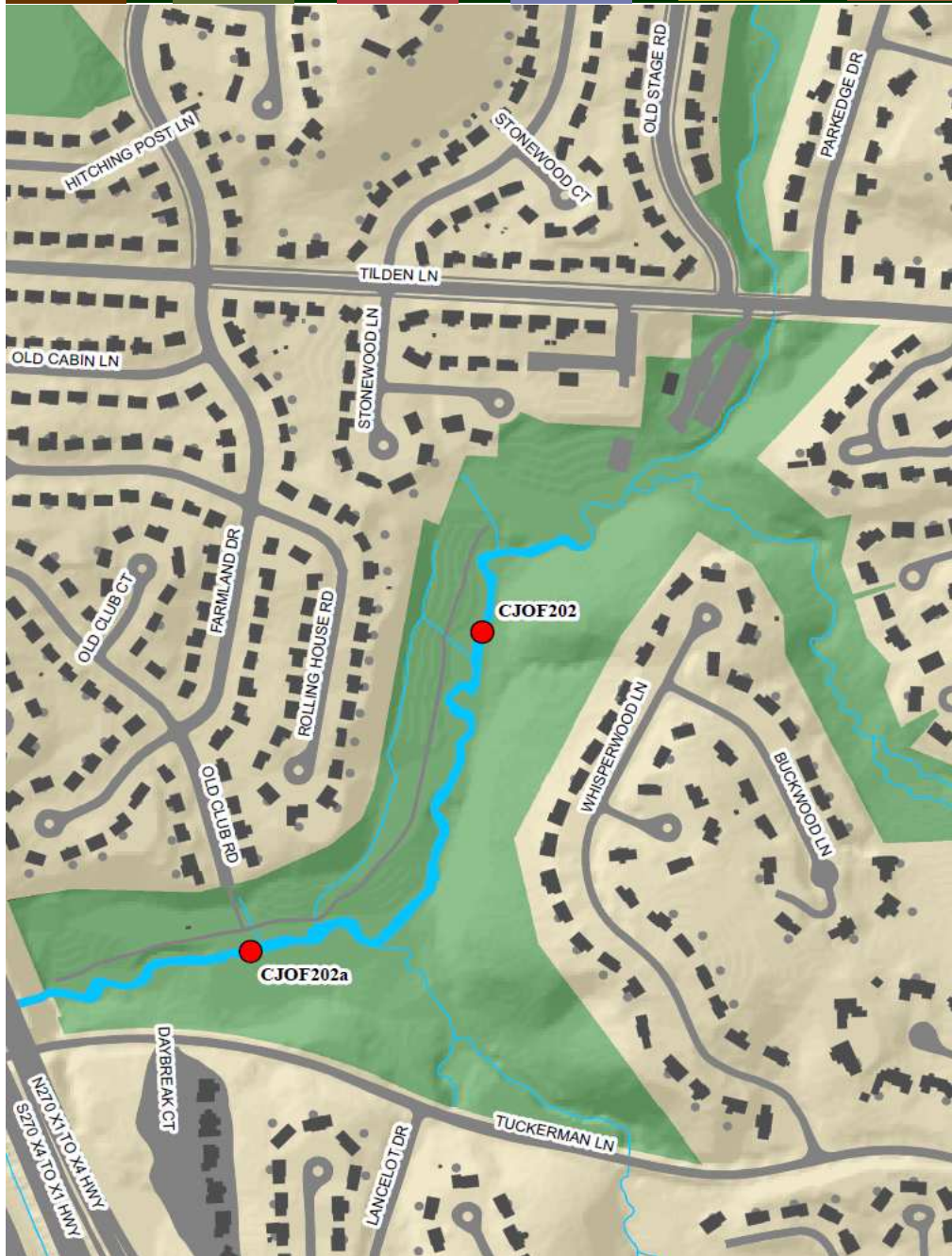
Watershed	Site	Purpose
Bennett Creek	BCBC201	Operation & Use Plan for Bennett Creek
	BCBC203	Operation & Use Plan for Bennett Creek
Cabin John	CJOF202	Old Farm Creek Stream Restoration Pre Data
	CJOF202a	Old Farm Creek Stream Restoration Pre Data
Hawlings River	HWRB301	Brookeville Bypass Pre Data
	HWRB302	Brookeville Bypass Pre Data
Paint Branch	PBUT201	Valley Mill Stream Restoration Post Data
Little Seneca	LSHM101a	SoccerPlex Long Term Study
	LSHM101b	SoccerPlex Long Term Study
Great Seneca	GSLS202	SoccerPlex Long Term Study
Northwest Branch	NWNW421	Anacostia Watershed Study (MWCOG)
Sligo Creek	SCSC314	Anacostia Watershed Study (MWCOG)
	SCLB101	Purple Line / Long Branch Pre Data
	SCLB101a	Purple Line / Long Branch Pre Data
	SCFT101	Flora Lane Stream Restoration Post Data
	SCWB101a	Evans Parkway
Upper Rock Creek	URRC306a	Muncaster Challenge Stream Restoration Post Data
	URRC306b	Muncaster Challenge Stream Restoration Post Data
TBD	TBD	Set aside for M-NCPPC Planning Department
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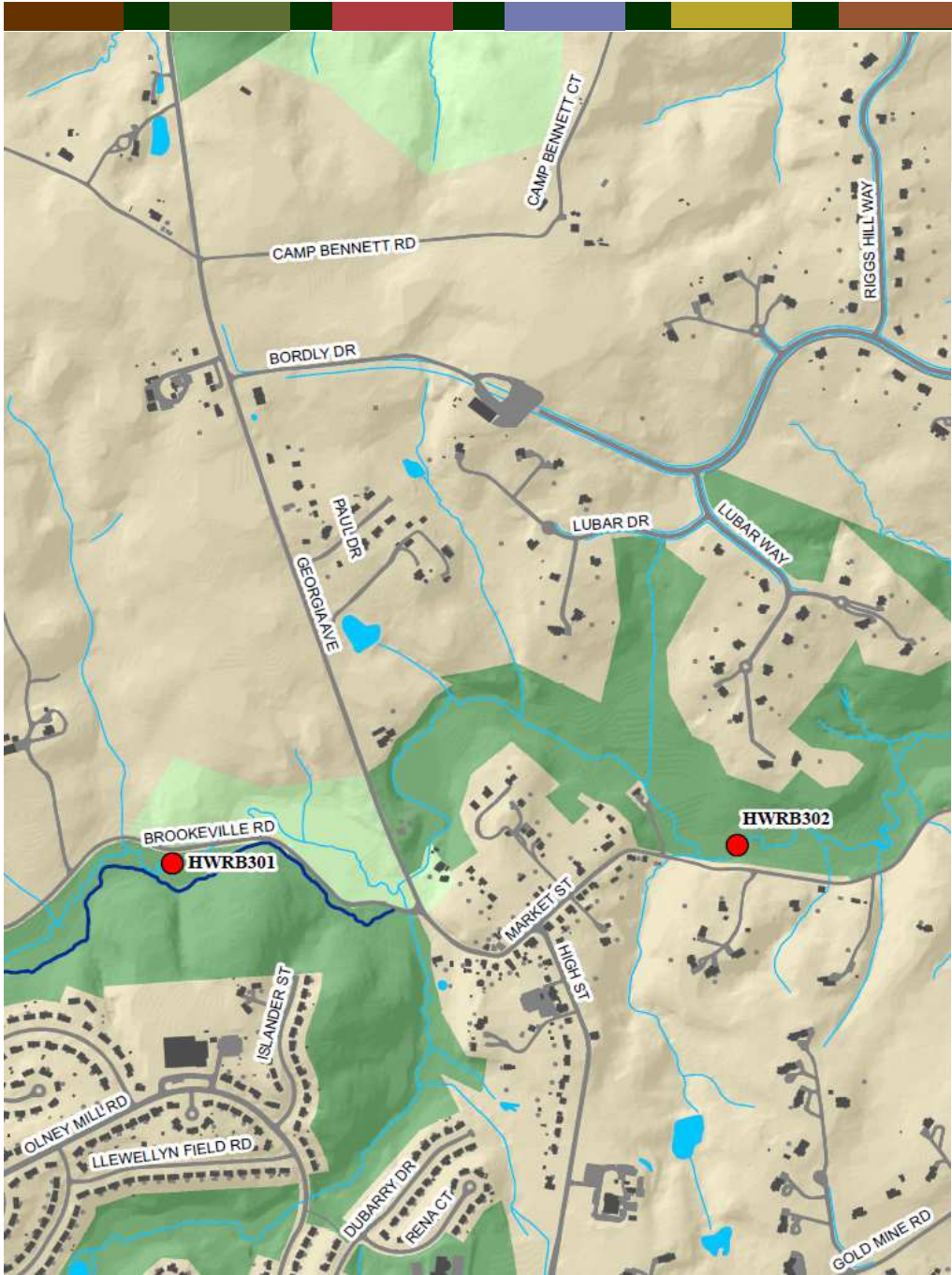


Bennett Creek

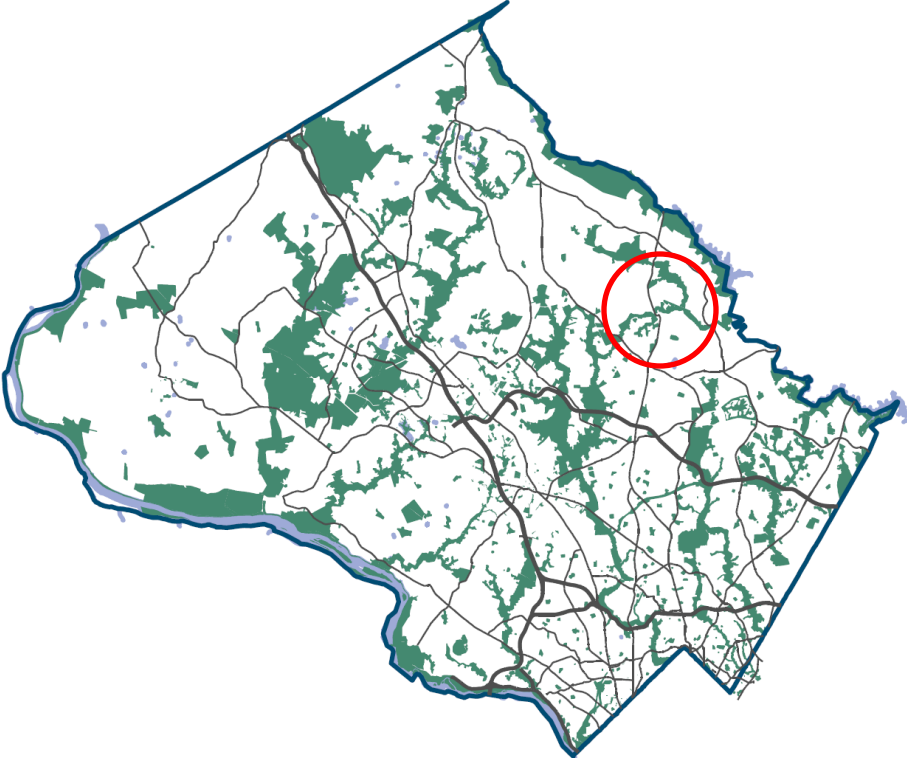


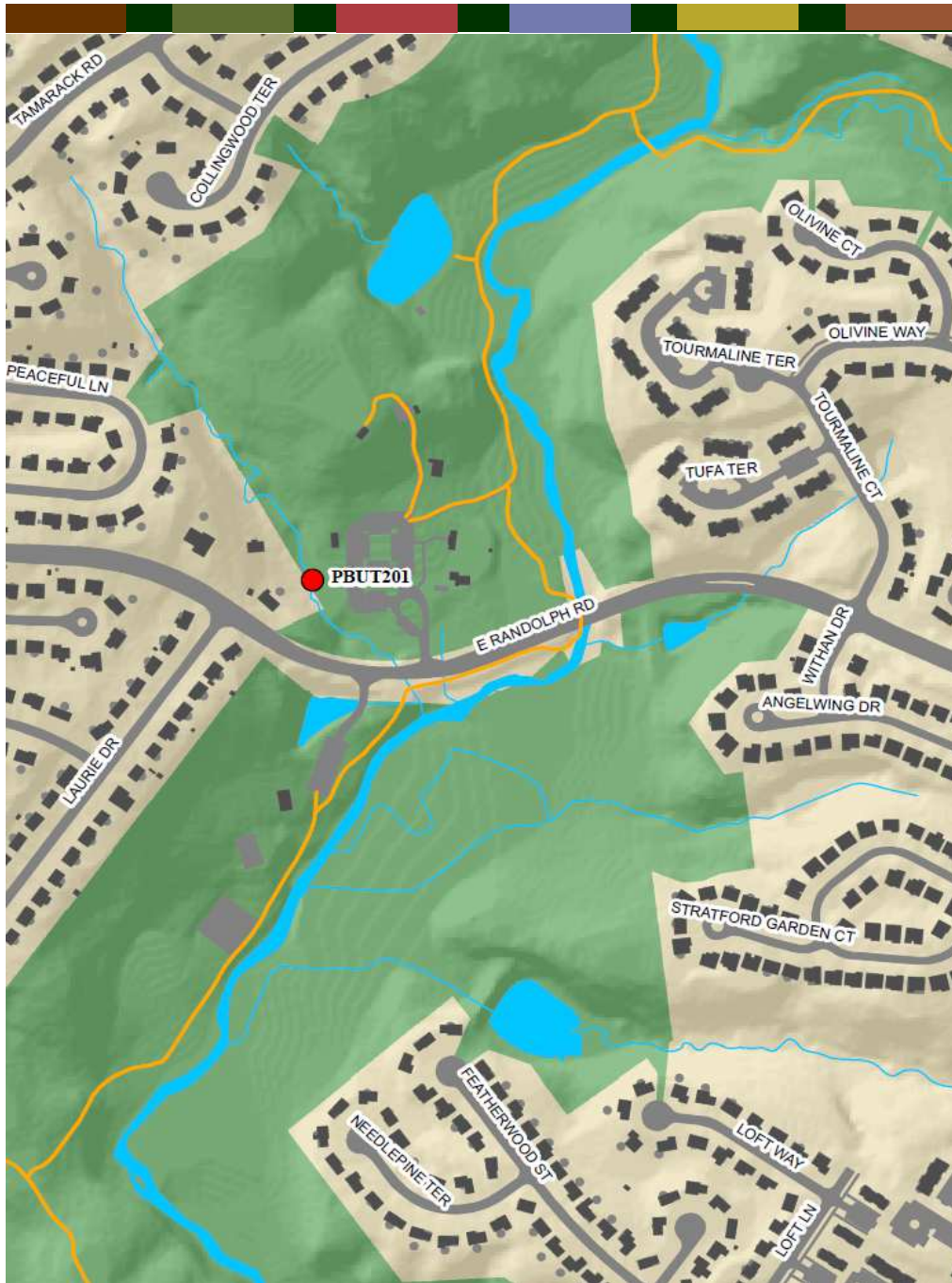
Cabin John





Hawlings

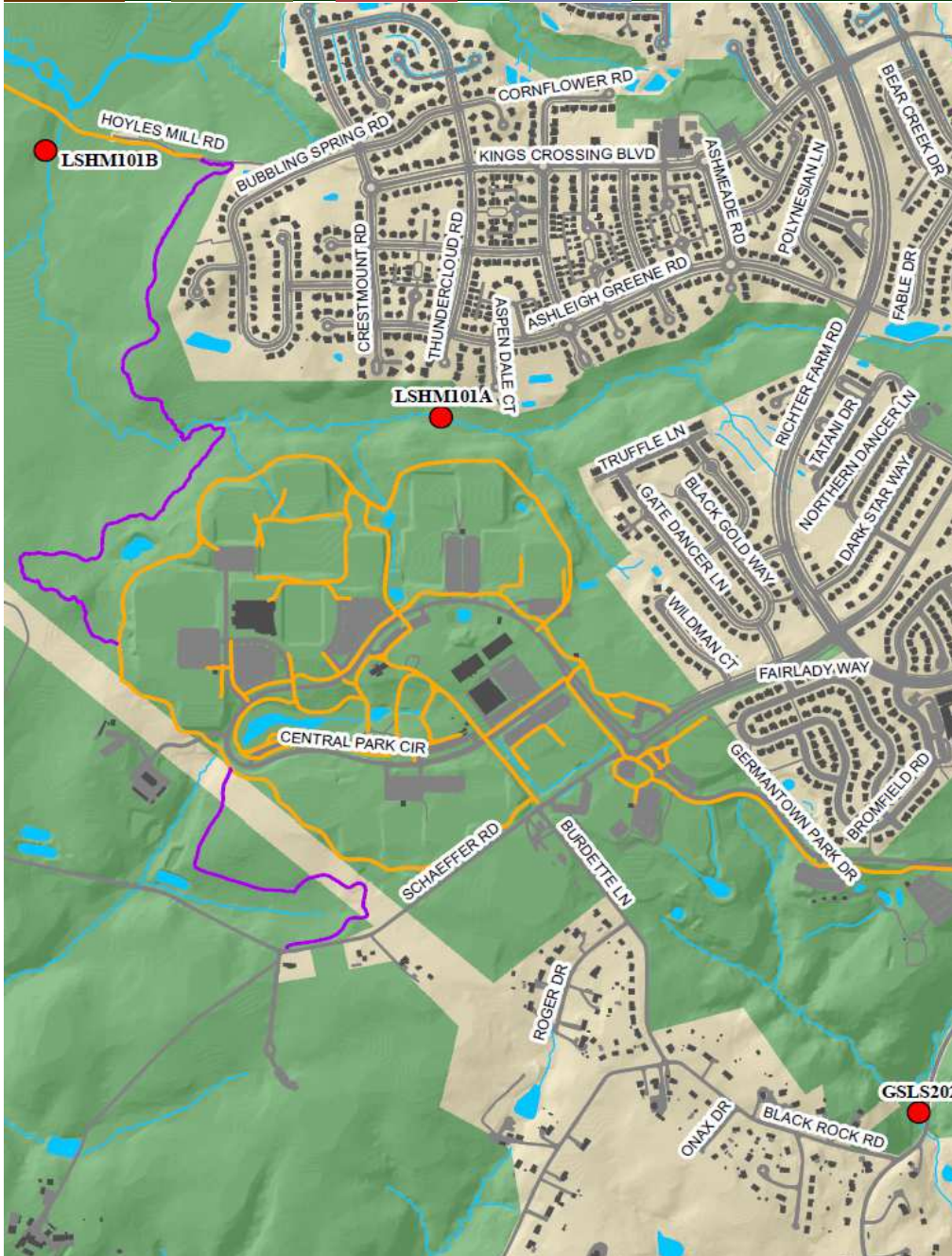




Paint Branch

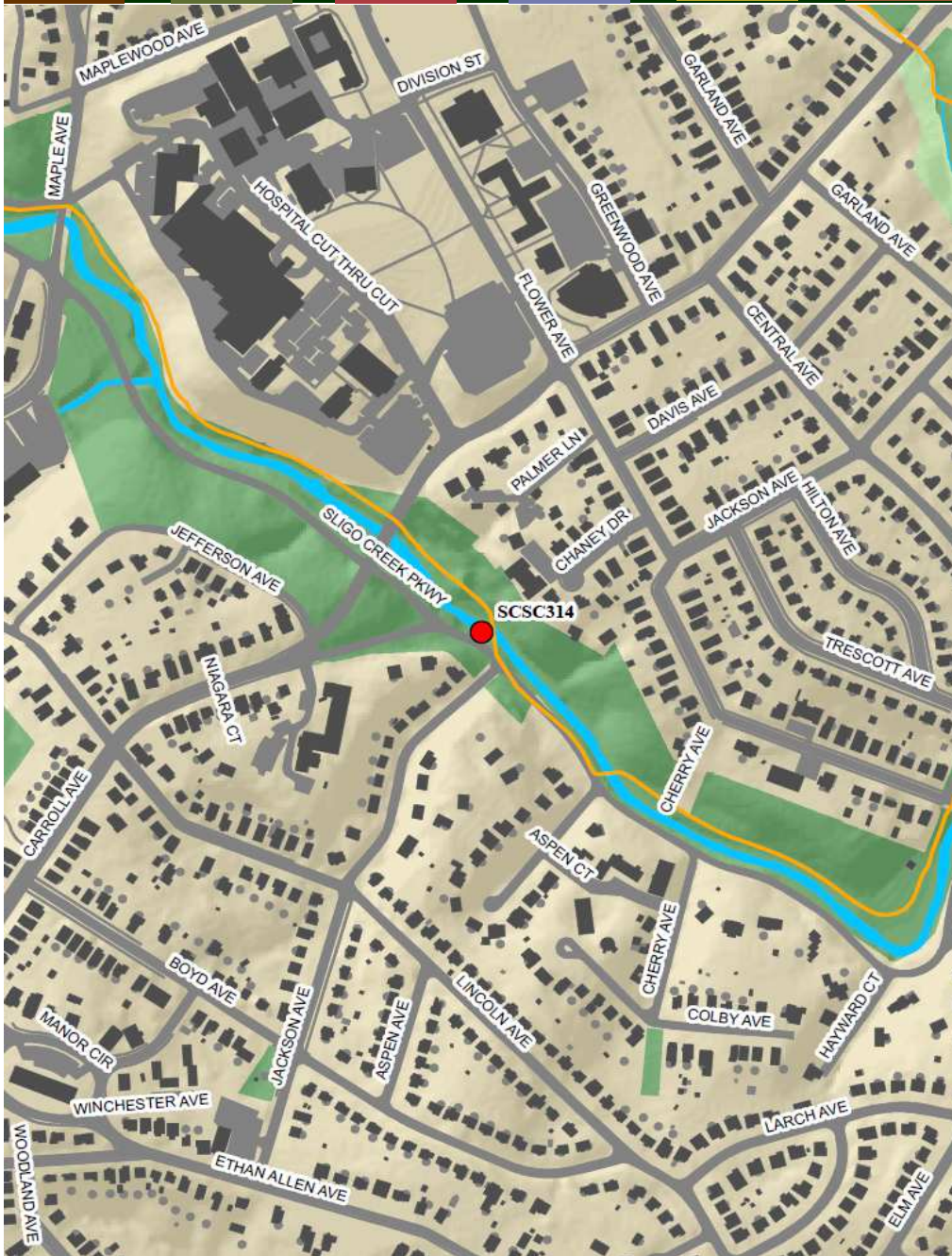


Seneca

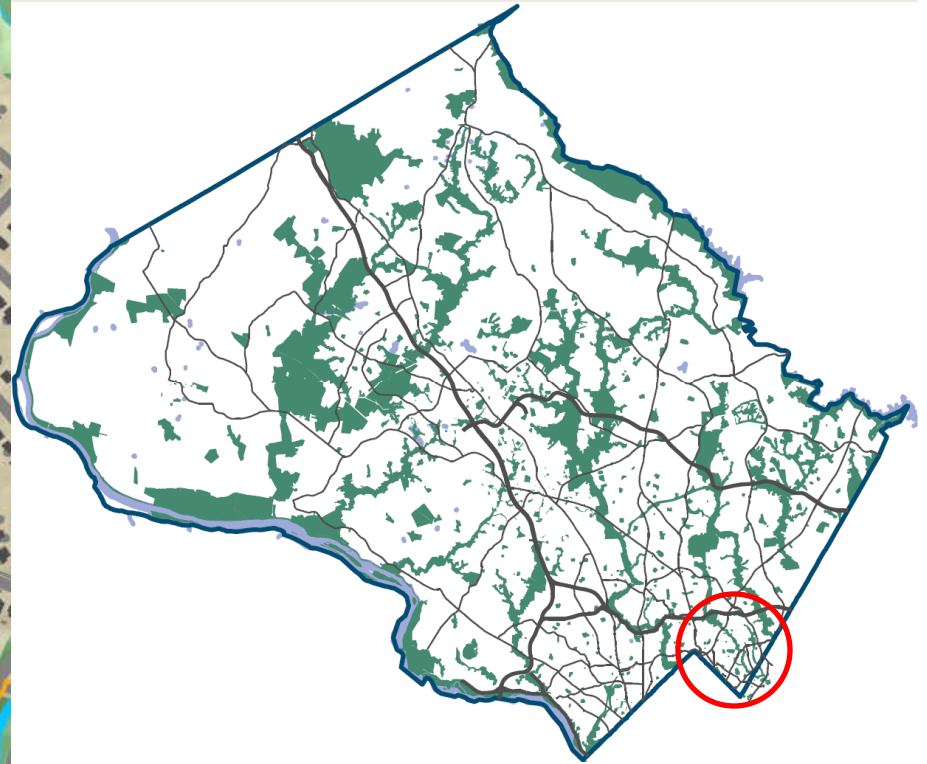


Northwest Branch



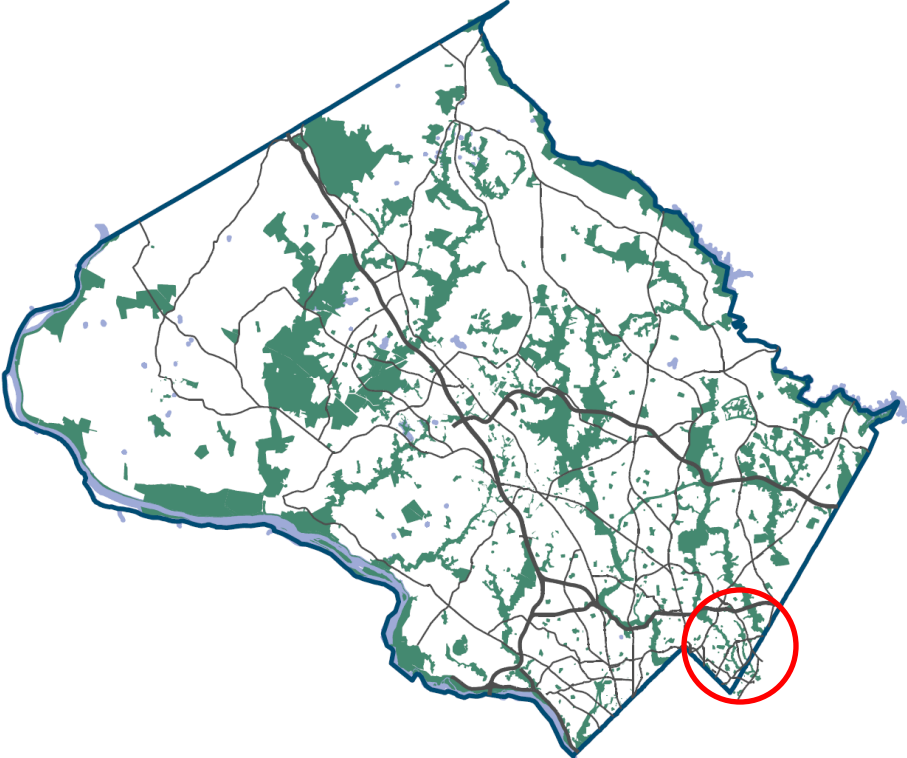


Sligo Creek

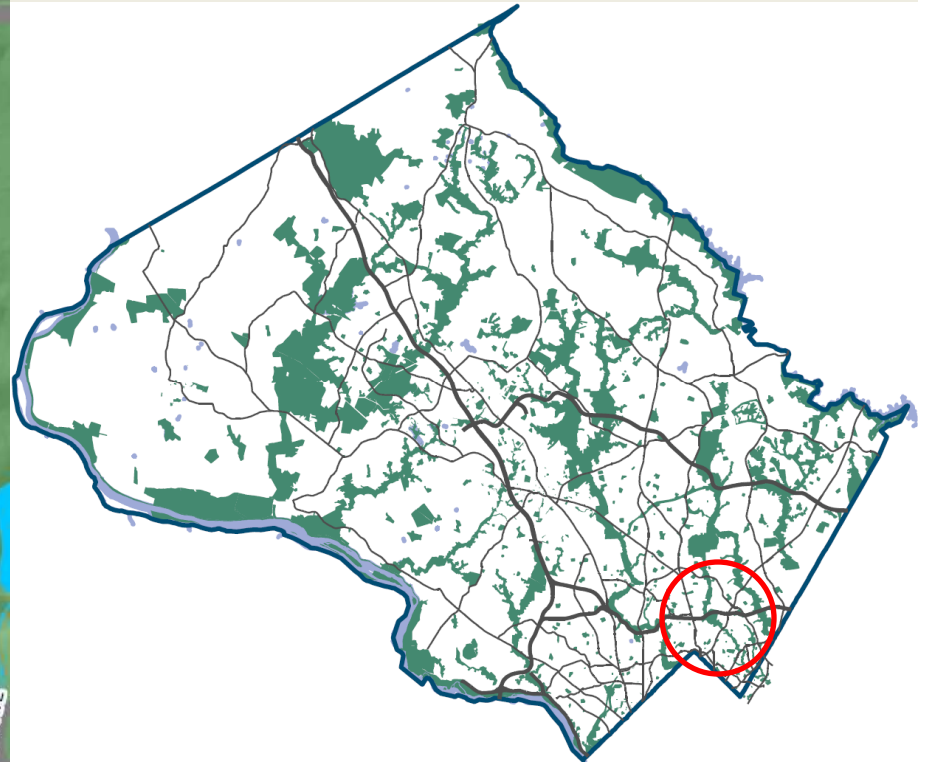
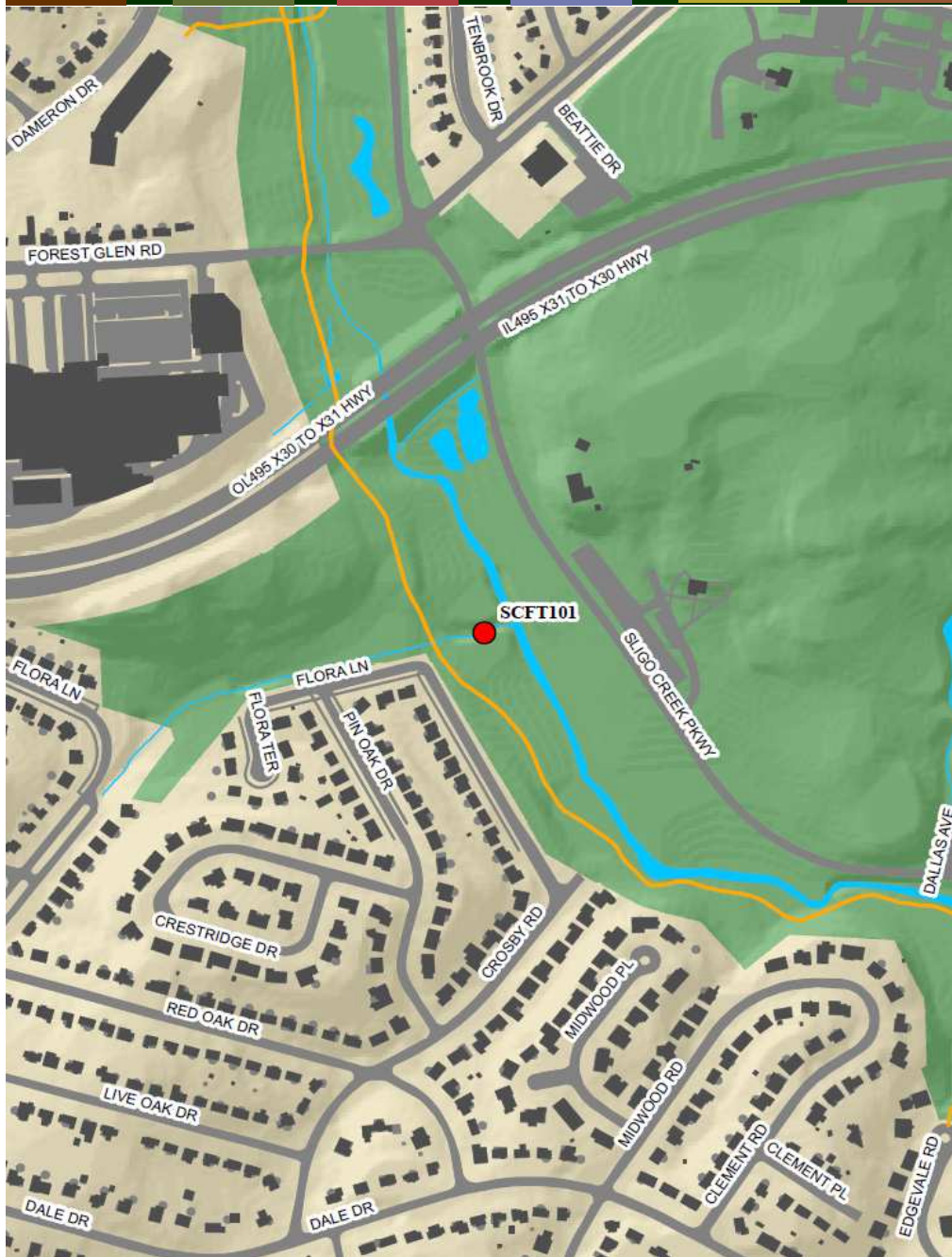


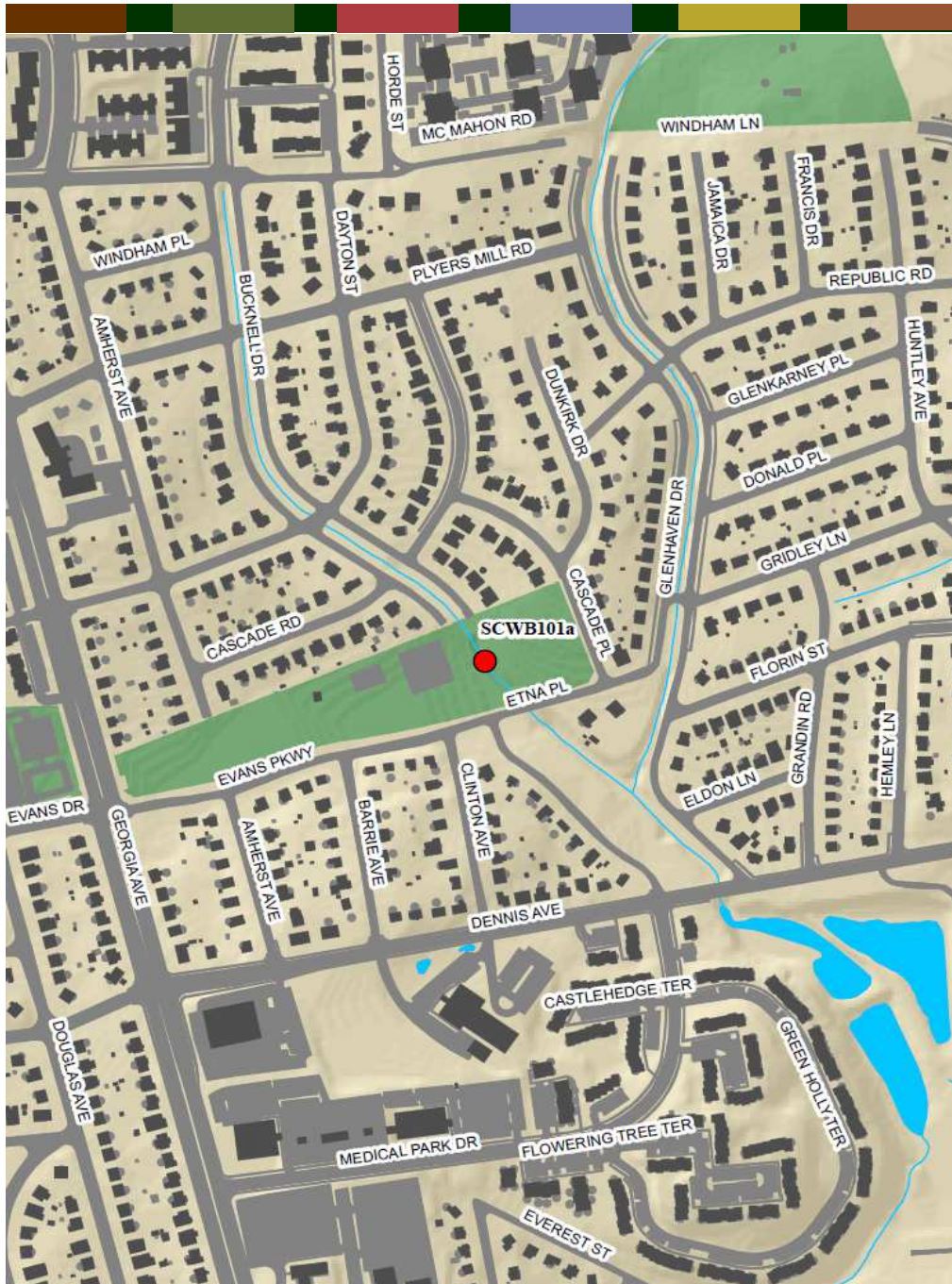


Sligo Creek



Sligo Creek





Sligo Creek



Upper Rock Creek

